CLAIMS AMENDMENT

Claims 1-58 (Canceled).

Claim 59 (Previously amended). The method of claim 84 wherein said alteration which occurs in the DNA sequence results in the inactivation of one or more enzymatic activities involved in the processing of the β-carbonyl of said polyketide.

Claim 60 (Canceled).

Claim 61 (Previously amended). The method of claim 84 wherein said alteration in the DNA sequence results in the addition of one or more enzymatic activities involved in the β-carbonyl processing of said polyketide.

Claims 62-71 (Canceled).

Claim 72 (Previously amended). The method of claim 84 wherein said DNA sequence is isolated from a species of the *Actinomycetales* family.

Claim 73 (Previously amended). The method of claim 72 wherein said DNA sequence is isolated from a genus selected from the group consisting of *Actinomyces, Dactylosporangium, Micromonospora, Nocardia, Saccharopolyspora, Streptoverticillium*, and *Streptomyces*.

Claim 74 (Original). The method of claim 73 wherein said genus is selected from the group consisting of *Saccharopolyspora* and *Streptomyces*.

Claim 75 (Original). The method of claim 74 wherein said genus is *Saccharopolyspora* and the species is *erythraea*.

Claims 76-78 (Canceled).

Claim 79 (Original). The method of claim 78 wherein said macrolide is an erythromycin.

Claim 80 (Previously amended). The method of claim 79 wherein said erythromycin is selected from the group consisting of 11-oxo-11-deoxyerythromycin A, 7-hydroxyerythromycin A and 6-deoxy-7-hydroxyerthythromycin A.

Claim 81 (Currently amended). The method of claim 84 wherein said DNA sequence, designated *eryA*, encodes a ~~protein~~ polyketide synthase having enzymatic activities associated with the formation of 6-deoxyerythronolide B.

Claims 82-83 (Canceled).

Claims 84 (Currently amended). A method for directing the biosynthesis of a modified ~~specific~~ polyketide ~~analog~~ by genetic manipulation of a polyketide-producing microorganism, wherein said polyketide is a macrolide and the method comprises the steps of:

(1) isolating a DNA sequence from a polyketide-producing microorganism encoding a polyketide synthase polypeptide comprising one or more domains providing enzymatic activities that support polyketide biosynthesis;

(2) identifying one or more regions of the DNA sequence encoding specific domains within the polyketide synthase polypeptide;

(3) altering the DNA sequence encoding the polyketide synthase polypeptide by either or both of,

(i) disrupting the DNA sequence encoding the polyketide synthase in one or more regions encoding a domain providing a β-carbonyl processing enzymatic activity selected from the group consisting of a β-ketoreductase, dehydratase, and enoylreductase, the disruption resulting in inactivation of said enzymatic activity in polyketide biosynthesis, and,

(ii) inserting within the DNA sequence encoding the polyketide synthase one or more DNA sequences encoding a domain providing β-carbonyl processing enzymatic activity selected from the group consisting

of a β-ketoreductase, dehydratase, and enoylreductase, the insertion resulting in the addition of said enzymatic activity in polyketide biosynthesis;

(4) transforming a polyketide-producing microorganism with the altered polyketide synthase-encoding DNA sequence to replace a native polyketide synthase-encoding DNA sequence of the microorganism;

(5) culturing the transformed microorganism in conditions suitable for the expression of the altered polyketide synthase and the biosynthesis of a specific polyketide analog by the altered polyketide synthase; and

(6) isolating the specific polyketide analog from the cultured cells or the culture medium.